ChargeYYC Phase 2 Grant Proposal

Application Submission Date: November 18, 2025 **Phase 1 Project ID:** CY2857

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1. Applicant Information

Primary Contact: David Nelson Elske, Treasurer Condominium Board 3412 Parkdale Blvd. N.W. Calgary, AB T2N 3T4

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Applicant Type: Condominium Corporation Board

Legal Name of Condominium Corporation: Hemisphere on The Bow - OCP 9913090

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2. Property Information

Property Address: 3412 Parkdale Blvd. N.W., Calgary, AB T2N 3T4

Neighbourhood: Parkdale

Building Type: Condominium

Construction Details: - Year of Construction: 1999 - Number of Storeys: 4 - Construction Type: Wood frame with concrete foundation - Total Residential Units: 28 - Total Parking Stalls: 40

Parking Configuration: Single-level heated underground parkade arranged in horseshoe configuration around the electrical room

Electrical Configuration: Each of the 28 units has individual electrical metering for all electricity usage, heating, and hot water. This individual metering infrastructure is a significant advantage for EV charging implementation, as it allows for fair cost allocation with EV owners paying for their own charging through their existing electrical accounts.

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3. Phase 1 Completion and EV Charging Plan

We successfully completed ChargeYYC Phase 1 and received approval for our EV Charging Road Map under Project ID CY2857. The Road Map was completed on July 17, 2025 and no changes to the building structure have been made since completion.

Summary of EV Charging Road Map Findings:

Our Phase 1 Road Map assessed the building's existing electrical capacity and developed a comprehensive plan for EV charging infrastructure installation. The Road Map identified:

- Current electrical capacity at the property: 216 kW
- Proposed charging type: Level 2 (208V/240V) charging stations
- Proposed number of charging stations: 10
- Proposed locations: Underground parkade, distributed throughout the horseshoe parking layout with relatively short conduit runs to the electrical room
- EV Energy Management System (EVEMS) requirement: Yes, required to manage electrical loads given existing unit heating, hot water, and electrical demands already drawing from the service

The Road Map provides the technical foundation for this Phase 2 implementation proposal.

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4. ENMAX Coordination

We have proactively initiated contact with the ENMAX Project Intake Team on November 18, 2025 to assess our electrical service capacity and determine any infrastructure upgrades required to support EV charging loads.

Current Status: Service request successfully submitted and confirmed by ENMAX

Submission Details: - **Request Date:** November 18, 2025 - **Service Type:** Relocate/modify existing ENMAX infrastructure - **Reason for Inquiry:** Electrification (EV chargers) - **Requested Completion Date:** March 31, 2026 - **ENMAX Contact:** GetConnected Team (getconnected@enmax.com, 403-514-3716) - **On-Site Electrical Contractor:** Logan Murdoch, Contact Electric (403-830-1233, incontactelectric@gmail.com)

Next Steps: ENMAX has confirmed receipt of our request and will contact us within two business days to discuss: - Estimated construction timelines - Initial payment request to begin design and engineering requirements for detailed quotation - Service capacity assessment findings - Infrastructure upgrades in the area that may be required - Timeline and scope of any utility-side construction needed

We are coordinating with ENMAX to understand: - Whether current electrical service has adequate capacity for EV charging - What infrastructure upgrades in the area may be required to support the increased load - The scope of construction required to complete the proposed upgrade - Timeline and coordination requirements

This proactive engagement demonstrates our commitment to thorough planning and realistic implementation coordination. We will incorporate ENMAX findings into the final engineering site design phase and provide updated information as the assessment progresses.

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5. Proposed Project Scope

We are applying for both the EV Enabled Rebate and the EV Charger Rebate to create a comprehensive EV charging solution for our building.

5.1 EV Enabled Infrastructure

Number of Parking Stalls to be Made EV Enabled: 10

Proposed Infrastructure:

We will install electrical infrastructure to make designated parking stalls EV Enabled through the following components:

Electrical Service and Distribution Upgrades Required upgrades to our electrical service and distribution panels to support EV charging loads while maintaining adequate capacity for existing unit heating, hot water, and electrical demands. Our building's 25-year-old electrical system presents the standard challenges faced by buildings from the 1990s construction era, including potential service capacity constraints and aging distribution panels.

Termination Points Installation Installation of 208V/240V termination points (junction boxes or 240V outlets) adjacent to designated parking stalls, wired from the main electrical service to each stall location. Our horseshoe parking layout around the electrical room provides relatively short, cost-effective conduit runs typical of 1990s 4-storey construction.

EV Energy Management System (EVEMS) Installation of an EVEMS to manage and balance electrical loads between EV charging and existing building electrical demands. With individual unit heating and hot water already drawing significant electrical loads, the EVEMS will ensure safe operation within service capacity limits and demonstrate how other buildings can integrate EV charging through load management strategies.

We are considering the V-Electric EVEMS solution (https://www.v-electric.com/), an Alberta-based company specializing in EV charging management systems. Supporting this project demonstrates how Alberta-based solutions can address EV charging infrastructure challenges in multi-unit residential buildings (MURBs), strengthening local expertise and creating replicable solutions developed right here in Alberta.

Conduit and Wiring Installation of conduit from the electrical room throughout the underground parkade to charging locations. The enclosed, climate-controlled environment of our heated underground parkade simplifies installation compared to outdoor surface parking and provides year-round EV charging reliability in Calgary's winter climate.

Engineering Design and Permits Professional engineering design stamped by an Alberta-licensed engineer, including load calculations per Section 8 of Part 1 of the Canadian Electrical Code. All necessary electrical permits and City of Calgary approvals will be obtained.

5.2 Level 2 Charging Equipment

Number of Charging Stations Proposed: 10 - Single-port stations: 10 - Dual-port stations: 0

Equipment Specifications:

All proposed Level 2 charging stations will meet ChargeYYC technical requirements and will be: - Level 2 (208V or 240V) charging capability with SAE J1772 standard plug head - Canadian safety certified (cUL, ULC, cETL, CSA, or cQPS certification) - New, purchased equipment (not leased or refurbished) - Permanently installed by licensed electrical contractor - Networked with cloud/server communication capability using open protocol (OCPP, OpenADR) or approved proprietary system - Maintained as networked for minimum two years as required

Individual Unit Connection Design:

Our system will be designed to establish connections between individual EVs and their associated unit electrical panels where applicable. This leverages our existing individual metering infrastructure and allows EV owners to pay for their own charging through their existing electrical accounts, the same way they currently pay for their unit's heating, hot water, and electricity usage. This design removes a common barrier in multi-residential buildings where cost allocation concerns often delay or prevent EV infrastructure projects.

Cost Advantage - No Separate Billing Required: By integrating EV charging into each unit's existing electrical service, EV owners avoid the additional costs associated with separate billing systems. Alternative architectures based on the common area/public panel require separate metering and billing infrastructure, which incurs ongoing administrative costs and billing fees that are passed on to EV owners. Our design eliminates these additional expenses, improving the value proposition for EV ownership and reducing barriers to adoption. This cost advantage makes EV charging more accessible and affordable for residents while reducing administrative complexity for the condominium corporation.

5.3 Innovative Feature: Vehicle-to-Building (V2B) Capability

Our proposed system will be designed to enable bidirectional electricity flow between electric vehicles and the building/individual units, establishing Vehicle-to-Building (V2B) and Vehicle-to-Home (V2H) capabilities where supported by the vehicle, charger, and electrical regulations.

Climate Resilience Benefits:

During power outages, compatible EVs will be able to provide electricity to critical building infrastructure or individual units, enhancing community resilience. This is particularly valuable during Calgary's winter storms and extreme weather events when power disruptions pose safety risks. This V2B capability adds a layer of energy resilience, allowing the building to better withstand climate-related power disruptions while supporting grid stability during peak demand periods.

Grid Integration and Future-Ready Infrastructure:

V2B capability allows EVs to serve as distributed energy storage, potentially supporting Calgary's electrical grid during peak demand periods. As V2B technology matures and more EV models support bidirectional charging (current models include Ford F-150 Lightning, Nissan Leaf, and select Hyundai/Kia models, with adoption growing), our infrastructure will already be positioned to take advantage of these capabilities. This positions our building to participate in future smart grid initiatives, supporting Calgary's transition to a more resilient and flexible electrical system.

Policy Development Opportunity:

Few multi-residential buildings in Calgary currently incorporate V2B readiness, making this project a leading example of forward-thinking infrastructure design. Our implementation will provide valuable learnings for City policies regarding V2B in multi-residential buildings, including: - Safety standards and best practices for bidirectional charging in condominiums - Metering considerations when V2B connects to individual unit electrical panels - Grid integration requirements and protocols - Building code implications and considerations - Individual unit versus common area power distribution approaches - Insurance and liability frameworks

This feature positions our project not just as an EV charging installation, but as a comprehensive energy resilience and grid integration solution that addresses both current EV charging needs and future energy system evolution.

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6. Estimated Costs and Funding Request

6.1 EV Enabled Rebate Request

Total Estimated Eligible Costs for EV Enabled Infrastructure: \$37,920.00

Cost Breakdown:

Cost Category	Estimated Amount
Engineering design services	\$4,240.00
Electrical infrastructure installation (service upgrades, distribution, conduit, wiring)	\$23,730.00
Termination points installation (junction boxes/outlets at parking stalls)	\$9,950.00
EVEMS equipment and installation	*Included in infrastructure costs*
Electrical permits and inspections	*Included in infrastructure costs*
TOTAL EV ENABLED COSTS	**\$37,920.00**

Number of Parking Stalls Made EV Enabled: 10

Average Cost per Parking Stall: \$3,792.00

Requested EV Enabled Rebate: \$18,960.00 (50% of eligible costs, within \$6,000/stall limit)

6.2 EV Charger Rebate Request

Total Estimated Eligible Costs for Level 2 Charging Stations: \$25,000.00

Cost Breakdown:

Cost Category	Estimated Amount
Level 2 charging station equipment and installation (10 single-port stations @ \$2,500 each)	\$25,000.00
TOTAL EV CHARGER COSTS	**\$25,000.00**

Number of Charging Stations: 10 single-port Level 2 stations

Average Cost per Charging Station: \$2,500.00

Requested EV Charger Rebate: \$10,000.00 (50% of eligible costs, max \$1,000/single-port station, capped at \$10,000 program maximum)

6.3 Total Funding Request

Total Eligible Project Costs (before tax): \$62,920.00 (\$37,920 EV Enabled + \$25,000 EV Charger)

Total Project Cost (including GST): \$66,066.00

Total ChargeYYC Rebate Requested: \$28,960.00

Breakdown of Rebate Request: - EV Enabled Rebate: \$18,960.00 - EV Charger Rebate: \$10,000.00

Percentage of Eligible Project Costs Covered by ChargeYYC: 46% (\$28,960 / \$62,920)

Condominium Corporation Contribution: \$37,106.00 (includes GST and costs above rebate amounts)

Other Funding Sources: We are not receiving or applying for funding from other sources for this project. The ChargeYYC rebate, combined with condominium funding, will cover all project costs.

6.4 Funding Model and Cost Allocation Strategy

Our project uses a phased approach with a clear and fair cost allocation model that has been approved by our condominium board:

Common Area Infrastructure (Board-Approved General Resolution): - **Design & Engineering:** \$4,240 - **Phase 1a - Core Electrical Infrastructure:** \$23,730

The condominium board has approved a general resolution, conditional on ChargeYYC acceptance, covering Design & Engineering and Phase 1a infrastructure costs. These represent the common area electrical upgrades and core infrastructure that benefits the entire building and creates the foundation for EV charging capability. This investment establishes the backbone electrical infrastructure from the service panel throughout the parkade, making it possible for individual owners to add EV charging at their parking stalls.

Individual Owner Responsibility: - **Phase 1b - EVEMS and Termination Points:** \$9,950 (\$995 per stall) - **Phase 2 - Level 2 Charging Equipment:** \$25,000 (\$2,500 per stall)

Phase 1b (EVEMS termination points) and Phase 2 (charger equipment installation) are considered individual owner responsibility in our design. Each unit owner choosing to participate will pay for their own EVEMS connection and charging equipment installation at their designated parking stall.

ChargeYYC Participation Model:

If approved for ChargeYYC funding, we will offer all owners the opportunity to participate in the program and have EVEMS termination points (Phase 1b) and Level 2 charging equipment (Phase 2) installed at their parking stalls. The ChargeYYC rebates will reduce the individual owner costs significantly:

- **Without ChargeYYC:** Owner cost = \$3,495 per stall (\$995 + \$2,500)
- **With ChargeYYC rebates:** Owner cost = approximately \$1,745 per stall (after 50% rebates applied)

Conservative Demand Estimate:

Our application requests funding for **10 charging stalls** based on a conservative extrapolation of our resident survey results. This estimate is conservative because:

1. **Current demand:** 10 residents indicating near-term EV purchase plans
2. **Multiple-stall households:** Some units have 2 parking stalls and may want chargers at both locations
3. **Detailed design phase consideration:** The final number of participating owners will be determined during the detailed engineering design phase, once ChargeYYC approval is confirmed and individual owners can make informed decisions based on actual costs and rebate amounts

This phased approach with clear cost allocation ensures: - Fair distribution of costs between common infrastructure and individual owner choices - Transparent decision-making for owners who choose to participate - Flexibility to adjust the final number of installations during detailed design - Strong financial sustainability with individual owners paying for their own charging equipment and usage - Board-approved common infrastructure funding that benefits the entire building

The 10-stall estimate provides a realistic baseline for the ChargeYYC application while acknowledging that the final participation level will be determined through the detailed design and owner engagement process.

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7. Demonstrated Resident Demand and Community Support

7.1 Current EV Ownership

One resident currently owns an electric vehicle and charges from the building's public electrical panel. This temporary solution demonstrates both existing demand and the critical limitations of our current infrastructure - the public panel cannot support the anticipated number of future EV chargers. The current EV owner has expressed willingness to transition from the public panel to the new dedicated EV charging system, demonstrating resident commitment to a proper, scalable solution.

7.2 Near-Term Anticipated Demand

We conducted a resident survey on May 23, 2025 to assess EV ownership plans and infrastructure needs. The survey results indicate that approximately 10 residents plan to purchase electric vehicles in the near future. This represents 36% of our 28 units - a substantial demand that far exceeds typical EV adoption rates and demonstrates urgent need for proper EV charging infrastructure.

Current situation: 1 resident with EV (inadequate charging via public panel) **Near-term demand:** 9 additional residents planning EV purchase (existing owner will retrofit) **Total anticipated demand:** 10 EVs serving 36% of building units

This strong documented demand shows we are not building speculative infrastructure - we are responding to demonstrated resident need and removing barriers that currently prevent residents from transitioning to electric vehicles.

7.3 Community Authorization and Support

A general resolution was passed at our November 4, 2024 Annual General Meeting authorizing the condominium board to proceed with the ChargeYYC Phase 2 application and EV charging infrastructure installation contingent upon funding approval.

This AGM resolution demonstrates: - Strong community engagement and buy-in for the project - Successful owner consensus on shared infrastructure investment - Forward-thinking approach to building improvements that benefit all residents - Commitment to enabling residents' transition to electric vehicles - Effective governance and decision-making processes

The resolution approval process showcases how condominium corporations can achieve owner consensus and move forward with infrastructure investments, providing a valuable case study for other multi-residential buildings navigating similar community decision-making challenges.

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8. Project Timeline

Engineering Site Design: Within 2 months of selection notification (estimated March 2026)

Agreement Signing with The City: Following approval of engineering design and cost estimates (estimated April 2026)

ENMAX Coordination Completion: April-May 2026

Permits Obtained: May 2026

Construction/Installation Period: June-October 2026

Installation Completion: Within 9 months of written confirmation from The City (estimated October 2026)

Final Inspection and Documentation: October 2026

We have no known factors that might delay the project. Our contractor has confirmed availability within this timeline, and we have board authorization to proceed immediately upon funding confirmation. The 9-month completion window provides adequate time for engineering, permitting, ENMAX coordination, and installation while maintaining schedule buffers for unforeseen circumstances.

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9. Why Our Building Is an Ideal Fit for ChargeYYC

9.1 Representative Building Archetype - High Replicability

Our 4-storey wood frame building constructed in 1999 represents one of the most common multi-residential building archetypes in Calgary. This is not coincidental - it reflects the building code standards of that era.

The 1990s Standard: Four-storey wood frame construction was the maximum height allowed under Calgary's building code at the time of construction. This archetype was the standard for multi-residential development in the 1990s, before code changes in 2014 permitted 5-6 storey wood frame buildings. Our building represents the pre-2014 standard that makes up a significant portion of Calgary's housing stock.

Scale of Opportunity: The 1990s saw substantial growth in Calgary with approximately 75,000-80,000 structures built during that decade. Wood frame with concrete foundation was the predominant construction method for mid-rise multi-residential buildings in this era, making our building typical of thousands of similar properties across Calgary.

Scalability and Learning Value: Success at our property will provide a replicable roadmap for thousands of 4-storey wood frame multi-residential buildings constructed in Calgary during the 1990s-2000s. The electrical infrastructure requirements, upgrade pathways, and installation solutions we identify will be directly applicable to similar buildings from this construction era. This is precisely the kind of high-value learning opportunity that ChargeYYC seeks - not a unique building requiring custom solutions, but a representative building where solutions can be standardized and scaled.

9.2 Individual Electrical Metering - A Key Structural Advantage

Each of our 28 units has individual electrical metering for all electricity usage, heating, and hot water. This existing infrastructure provides a significant advantage for EV charging implementation that removes one of the most common barriers in multi-residential buildings.

Fair Cost Allocation: Individual metering allows residents to pay for their own electricity usage rather than splitting costs across the building. For EV charging, this means EV owners pay for their own charging costs through their existing electrical accounts, the same way they currently pay for their unit's heating and electrical usage. This eliminates the common concern of non-EV owners subsidizing EV charging costs, which often prevents or delays EV infrastructure projects in multi-residential buildings.

Energy Conservation Track Record: Research shows that individually metered residences consume an average of 17% less energy, and submetering can reduce building energy consumption by 18-40%. Our building already promotes energy conservation through this infrastructure, and extending this principle to EV charging aligns with our existing approach.

Alberta Regulatory Alignment: Alberta requires suite metering for all new construction and renovations, and Ratio Utility Billing (RUBs) of electricity is not allowed. Our 1999 building was ahead of this curve, and our approach demonstrates how this infrastructure advantage can be leveraged for EV charging in ways that other buildings can replicate.

Cost Efficiency - No Separate Billing Infrastructure: By connecting EV charging to individual unit meters, our design avoids the additional costs of separate billing systems required by common-area panel architectures. EV owners pay for charging through their existing utility bills without additional administrative fees or billing infrastructure costs. This reduces both upfront installation costs and ongoing operational expenses, making EV charging more affordable and accessible while simplifying administration for the condominium corporation.

Alberta-Based Solutions: We are considering the V-Electric EVEMS solution, an Alberta-based company that develops EV charging management systems specifically for multi-unit residential buildings. Supporting this project showcases how Alberta companies can develop innovative solutions to MURB electrification challenges, strengthening local expertise and economic benefits while creating replicable approaches developed right here in Alberta.

9.3 Strong, Documented Demand - Not Speculative Infrastructure

With 36% of our units already indicating EV ownership or near-term purchase plans (1 current owner + 9 anticipated = 10 EVs in 28 units), we demonstrate substantial, urgent demand that exceeds typical adoption rates.

Current Inadequacy: Our one current EV owner is forced to use the building's public electrical panel - a temporary solution that demonstrates both existing demand and infrastructure limitations. The public panel cannot support the anticipated number of future EV chargers, creating an urgent need for proper infrastructure.

Documented Future Demand: Our resident survey provides concrete evidence of near-term demand from 10 additional residents. This isn't speculative or projected - these are residents who

have indicated specific plans to purchase electric vehicles but are currently prevented from doing so by lack of charging infrastructure.

Barrier Removal: Currently, residents who own or want to purchase EVs face a significant barrier - lack of home charging infrastructure. This project directly addresses this obstacle and enables 10+ residents (36% of our building) to participate in the transition to clean transportation. We are removing infrastructure barriers for residents who would otherwise be unable to charge at home, regardless of their environmental commitment or desire to reduce emissions.

9.4 Optimal Infrastructure for Cost-Effective Installation

Horseshoe Parking Layout: Our single-level heated underground parkade is arranged in a horseshoe configuration around the electrical room, providing relatively short conduit runs from the service to parking stalls. This efficient layout is typical of 1990s 4-storey construction and will demonstrate cost-effective installation strategies that other buildings can replicate.

Climate-Controlled Environment: The enclosed, heated underground environment simplifies installation compared to outdoor surface parking (no trenching, weatherproofing challenges minimized) and provides year-round EV charging reliability in Calgary's winter climate. This configuration is common in 4-storey buildings from this era, making our installation approach directly applicable to similar properties.

Typical 1990s Electrical Challenges: Our building's 25-year-old electrical system presents the standard challenges faced by buildings from this construction era, including potential service capacity constraints and aging distribution panels. The solutions we develop for balancing existing loads (unit heating and hot water) with new EV charging demands will be valuable for thousands of similar buildings facing identical challenges.

9.5 Vehicle-to-Building Innovation Leadership

Few multi-residential buildings in Calgary currently incorporate Vehicle-to-Building capability, making this project a pioneering implementation that provides exceptional learning value.

Beyond Transportation: V2B capability positions this project beyond basic EV charging into comprehensive energy resilience and grid integration. This demonstrates how multi-residential buildings can contribute to Calgary's climate strategy while enhancing community resilience against power disruptions.

Policy Development Opportunity: Our V2B implementation will provide valuable learnings for City policies regarding bidirectional charging in multi-residential buildings - an area where policies and best practices are still emerging. We will pioneer approaches to: - Safety standards for V2B in condominium settings - Metering considerations when V2B connects to individual unit panels - Grid connection requirements and protocols - Building code implications - Individual unit versus common area power distribution - Insurance and liability frameworks

Climate Resilience Addition: During power outages, compatible EVs will be able to provide electricity to critical building infrastructure or individual units. This is particularly valuable during

Calgary's winter storms when power disruptions pose safety risks. V2B adds a climate adaptation dimension beyond the climate mitigation benefits of EV adoption.

Future-Proof Investment: As V2B technology matures and more EV models support bidirectional charging, our infrastructure will already be positioned to take advantage of these capabilities. This demonstrates long-term thinking aligned with Calgary's climate strategy and positions our building to participate in future smart grid initiatives.

9.6 Geographic and Community Context

Parkdale Neighbourhood: Located in an established inner-city community that has evolved from primarily single-family homes (developed post-WWII in 1940s-1950s) to include multi-residential properties. Our building represents Calgary's urban intensification pattern and the evolution of older neighbourhoods toward higher-density housing.

Inner-City Retrofit Challenges: This inner-city location presents different infrastructure challenges than new suburban developments - working with existing utility infrastructure, established neighbourhoods, and aging buildings. Our project provides learning opportunities for how to retrofit established neighbourhoods with EV charging capability, complementing learnings from newer suburban buildings.

Geographic Diversity: Contributing to program learnings from different areas of Calgary beyond newer suburban developments, demonstrating that inner-city established communities can support EV infrastructure and climate action.

9.7 Community Governance and Decision-Making Model

As a condominium corporation, our project demonstrates how condo boards can achieve owner consensus and move forward with shared infrastructure investments that benefit all residents.

AGM Resolution: Our November 4, 2024 AGM resolution shows successful community engagement and buy-in. The approval process required communication with owners, education about EV infrastructure benefits and costs, and successful consensus-building - all valuable learnings for other condominium corporations.

Governance Template: Many multi-residential buildings face administrative and governance challenges when attempting EV infrastructure projects. Our experience navigating board approval, owner communication, and AGM authorization provides a replicable governance model for other buildings.

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10. Climate Impact and Alignment with Calgary's Climate Strategy

10.1 Direct Transportation Emissions Reduction

Transportation makes up approximately 33% of Calgary's annual greenhouse gas emissions. Enabling 11+ residents (39% of our units) to transition to electric vehicles directly addresses this significant emissions source, aligned with Calgary's Climate Strategy goals.

Immediate Impact: Our 11 anticipated EVs represent concrete, near-term emissions reductions, not long-term projections. These are residents ready to make the transition, waiting only for infrastructure.

10.2 Multi-Residential Climate Equity

According to the most recent census, 38% of all occupied dwellings in Calgary are in multi-residential properties. Without programs like ChargeYYC, residents in these buildings face significant barriers to EV adoption compared to single-family homeowners (who can easily install home charging), creating transportation inequity.

Equity and Access: Someone in a detached home may decide to install an EV charger in their garage and proceed immediately. EV owners living in multi-residential properties need permission from multiple entities, face complex technical challenges, and shoulder significantly higher costs. Our project removes these barriers for residents who want to reduce emissions but face infrastructure obstacles.

10.3 Existing Building Retrofit - Long-Term Infrastructure Investment

Preparing this 25-year-old building for the next generation of transportation demonstrates how existing housing stock can be retrofitted for climate action. This is critical because:

Building Stock Reality: The vast majority of buildings that will exist in 2050 already exist today. New construction alone cannot address climate goals - we must retrofit existing buildings.

Intergenerational Benefit: Making sustainable transportation accessible to current residents while ensuring the building remains viable and attractive for future generations who will expect EV charging as standard infrastructure. This project extends the useful life of a 1990s building by future-proofing it for evolving transportation needs.

10.4 Enhanced Climate Resilience Through V2B

Vehicle-to-Building capability adds a layer of energy resilience, allowing the building to better withstand climate-related power disruptions while supporting grid stability during extreme weather events.

Climate Adaptation: This is climate adaptation, not just mitigation. As climate change increases the frequency and severity of extreme weather events, building resilience against power disruptions

becomes increasingly important, particularly during Calgary's winter when power outages pose serious safety risks.

Grid Modernization: V2B-ready infrastructure positions our building to participate in future smart grid initiatives, supporting Calgary's transition to a more resilient and flexible electrical system that can better integrate renewable energy sources and manage variable demand.

10.5 Scalable Climate Impact - The Multiplier Effect

By creating a successful, replicable template for 1990s-era 4-storey wood frame buildings, this project can accelerate EV infrastructure deployment across thousands of similar properties, multiplying the climate impact far beyond our single building.

Template for 75,000-80,000 Buildings: If our approach can be replicated across even a fraction of the 1990s construction cohort, the climate impact scales dramatically. This is the power of working with a representative building rather than a unique case.

10.6 Neighbourhood-Level Impact

As one of the early EV-enabled buildings in Parkdale, we will contribute to normalizing electric vehicle adoption in established inner-city neighbourhoods, creating visible climate action in the community. This visibility and normalization can accelerate adoption beyond our building, influencing neighbours and other buildings in the community.

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11. Scalability and Replicability

11.1 Building Type Scale

Common Construction Method: Wood frame with concrete foundation was the predominant construction method for mid-rise multi-residential buildings in the 1990s. Our building is typical of thousands of similar properties across Calgary, making solutions directly transferable.

Standard Electrical Challenges: The electrical infrastructure requirements and upgrade pathways we identify will be directly applicable to similar buildings from this construction era, all facing similar challenges of integrating new loads (EV charging) with existing demands (unit heating, hot water, electrical).

11.2 Cost Benchmarking

Our project will establish realistic cost expectations for similar buildings considering EV infrastructure, helping others plan and budget effectively. Cost uncertainty is a significant barrier to many buildings considering EV infrastructure - our documented costs will reduce this uncertainty for similar properties.

11.3 Process Documentation

From board approval to ENMAX coordination to installation, we will demonstrate the complete implementation pathway for similar properties: - Board/owner approval and consensus-building - ENMAX coordination and utility upgrade navigation - Engineering design and load calculation approaches - Permitting and regulatory compliance - Contractor selection and project management - EVEMS implementation and load balancing - Individual metering integration with EV charging - V2B capability incorporation

11.4 Individual Metering Replication

Our approach demonstrates how existing individual metering can facilitate EV charging adoption. Alberta requires suite metering for new construction, so our model shows how this increasingly common infrastructure configuration can be leveraged for EV charging with fair cost allocation.

11.5 V2B Innovation Pathfinding

By incorporating Vehicle-to-Building capability readiness, we will pioneer policies and best practices for bidirectional charging in multi-residential buildings. This positions Calgary as a leader in resilient, grid-integrated EV infrastructure and provides a roadmap for other buildings to follow.

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12. Learning Value for City Policy Development

ChargeYYC aims to "learn from the experiences of Calgarians participating in this program to help inform City policies related to public charging and EV charging at home in the future." Our project provides exceptional learning value across multiple dimensions:

12.1 1990s Building Retrofit Learnings

- Technical approaches for integrating EV charging with 25-year-old electrical infrastructure
- Cost benchmarks for similar building types and eras
- Solutions for common challenges in wood frame construction
- Load balancing strategies for buildings with high existing electrical demands

12.2 Individual Metering and Cost Allocation

- How individual unit metering facilitates EV charging adoption
- Best practices for connecting EV charging to individual unit accounts
- Metering and billing approaches that ensure fair cost allocation
- How individual accountability affects resident acceptance and project approval

12.3 V2B in Multi-Residential Settings

- Safety standards and installation requirements for bidirectional charging
- Metering considerations when V2B connects to individual units
- Grid connection protocols and utility coordination requirements
- Building code implications and recommended approaches
- Governance and decision-making for shared V2B infrastructure

12.4 Community Engagement and Governance

- How condominium corporations can achieve owner consensus
- Effective communication strategies for resident education
- AGM approval processes and best practices
- Balancing individual versus common interests in shared infrastructure

12.5 ENMAX Coordination Process

- Timeline and process for utility coordination
- Service capacity assessment approaches
- Infrastructure upgrade requirements and costs
- How to navigate utility coordination while meeting project deadlines

12.6 Demand Assessment and Right-Sizing

- Resident survey approaches and effectiveness
- How to balance current demand with future growth
- Phasing strategies for scalable infrastructure
- Correlation between surveyed interest and actual adoption

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13. Installation Complexity and Valuable Troubleshooting

13.1 Typical 1990s Electrical Infrastructure Challenges

Our building's 25-year-old electrical system presents the standard challenges faced by buildings from this construction era: - Potential service capacity constraints requiring careful load calculation - Aging distribution panels that may need upgrades - Integration of new loads with existing high-demand systems (heating, hot water) - Balancing cost-effectiveness with necessary upgrades

The solutions we develop will be directly applicable to thousands of buildings facing identical challenges.

13.2 Wood Frame Construction Considerations

Installing conduit and electrical infrastructure in wood frame buildings requires different approaches than concrete construction: - Routing through wood frame structure - Fire safety considerations specific to wood construction - Accessing service panels and distribution systems - Conduit mounting and support in wood frame parkades

These are common challenges that many similar buildings will face, making our learnings highly valuable.

13.3 EVEMS Implementation with Individual Metering

We will demonstrate how to integrate EV Energy Management Systems with individual unit metering: - Load prioritization strategies - How EVEMS coordinates with individual unit demands - Balancing building-wide capacity with unit-level consumption - Metering and billing when EVEMS manages loads

This combination (EVEMS + individual metering) will become increasingly common as more buildings with individual meters add EV charging.

13.4 V2B Technical Implementation

Working with contractors and engineers to implement V2B readiness will generate valuable technical documentation: - Electrical design requirements for bidirectional flow - Safety disconnects and protective equipment - Integration with individual unit panels - Compliance with electrical codes for bidirectional charging

13.5 Valuable Troubleshooting Documentation

The installation challenges we encounter and solve will provide practical guidance for contractors and property managers tackling similar retrofits. This real-world troubleshooting experience is often more valuable than theoretical planning documents.

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14. Technical Compliance Confirmation

All proposed work will be completed by licensed professionals in full compliance with: - Alberta electrical codes and regulations - City of Calgary bylaws and building codes - Fire safety codes and best practices - Manufacturer specifications for all equipment - Canadian Electrical Code Section 8 load calculations - Electric authority (ENMAX) jurisdiction and requirements

EV Enabled Infrastructure Compliance: Parking stalls will have termination points (junction boxes wired for 208V/240V Level 2 charging or 240V outlets) adjacent to stalls. Adequate electrical capacity will be ensured through load calculations per Section 8 of Part 1 of the Canadian Electrical Code. Where calculations determine service capacity is insufficient, an approved EVEMS will be installed to manage loads safely.

Level 2 Charging Equipment Compliance: All charging stations will be: - Approved for sale and use in Canada (cUL, ULC, cETL, CSA or cQPS certification) - Level 2 (208V or 240V) stations with SAE J1772 standard plug head - Purchased (not leased), permanent installations - New (not used or refurbished) - For new installation or expansion (not replacement of existing) - Installed by licensed electrical contractor - Networked with cloud/server communication capability - Maintained as networked for minimum two years

All work will comply with applicable local codes, bylaws, and fire safety regulations.

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15. Post-Program Obligations and Commitments

We understand and commit to the following post-installation obligations:

Networked Chargers: Maintain networked operation for minimum two years as required by the program.

Information Provision: Provide information to verify project completion as requested by The City, including invoices, photos, technical documentation, and completion certificates.

Site Visits: Allow City site visits within one year of rebate payment for verification and documentation purposes.

Program Evaluation: Participate in program evaluation and case study development, including: - Sharing resident feedback and usage data - Documenting lessons learned and challenges overcome - Providing cost and timeline information for benchmarking - Contributing to policy development recommendations - Participating in interviews or presentations about the project

Learning Dissemination: We are committed to sharing our experience to benefit other multi-residential buildings. This includes documenting our V2B implementation approach, individual metering integration, EVEMS deployment, and community engagement process.

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16. Supporting Documentation

The following documents are submitted with this application:

1. **ChargeYYC Phase 1 Road Map (Project CY2857)** - Our approved EV Charging Road Map completed through ChargeYYC Phase 1, providing technical assessment and implementation plan.
2. **Contractor Estimate** - Detailed cost estimate from Parkdale EV Infrastructure for proposed EV Enabled infrastructure and Level 2 charging station installation.
3. **Resident Survey Results** - Survey demonstrating demand for approximately 10 EVs in the near future (36% of units).

4. **AGM Resolution** - November 4, 2024 Annual General Meeting resolution authorizing the condominium board to proceed with ChargeYYC Phase 2 application and project implementation contingent on funding approval.
5. **ENMAX Project Intake Correspondence** - Correspondence was initiated on November 18, 2025.
6. **Engineering Site Design** - To be submitted after selection, following completion of final engineering design stamped by Alberta-licensed engineer.

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17. Conclusion

Our project represents an ideal convergence of factors that make it exceptionally valuable for the ChargeYYC pilot program:

Representative and Scalable: As one of thousands of 4-storey wood frame buildings from Calgary's 1990s construction boom (75,000-80,000 structures), success at our property creates a template directly applicable to a massive segment of Calgary's housing stock.

Demonstrated Urgent Demand: With 36% of units indicating EV ownership or near-term purchase plans, we're not building speculative infrastructure - we're responding to urgent, documented resident need that far exceeds typical adoption rates.

Innovation and Resilience: Our Vehicle-to-Building capability positions this project beyond basic EV charging into comprehensive energy resilience and grid integration, demonstrating how multi-residential buildings can contribute to Calgary's climate strategy while enhancing community resilience.

Infrastructure Advantages: Individual electrical metering removes a common barrier (cost allocation), while our optimal parking layout around the electrical room enables cost-effective installation that other buildings can replicate.

Community Leadership: Our AGM resolution and strong resident support demonstrate successful community engagement, providing a governance model for other condominium corporations.

Exceptional Learning Value: This project will inform City policies on multiple fronts: 1990s building retrofits, individual metering advantages, V2B implementation in multi-residential settings, ENMAX coordination processes, EVEMS deployment, and cost benchmarking for similar building types.

Climate Equity: By demonstrating how existing multi-residential buildings can enable EV adoption, we address the transportation equity gap between single-family homeowners (who can easily install home charging) and the 38% of Calgarians in multi-residential buildings who face significant barriers.

We are offering the ChargeYYC program not just an installation project, but a comprehensive learning laboratory that can accelerate EV infrastructure deployment across thousands of Calgary buildings while pioneering innovative approaches to energy resilience and grid integration.

Our building is well-positioned to deliver maximum value to the ChargeYYC pilot program while enabling our residents to participate in Calgary's transition to clean transportation and climate action.

Submitted by:

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